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09/602,345 06/23/00 OAKLEY

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EXAMINER

PHAM, H

ART UNIT

PAPER NUMBER

2861

DATE MAILED: 06/01/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/602,345

Applicant(s)

OAKLEY, WILLIAM S.

Examiner

Hai C Pham

Art Unit

2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claims ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: .

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 250 words. It is important that the abstract not exceed 250 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because it does not meet the required minimum of 50 words. Correction is required. See MPEP § 608.01(b).

Claim Objections

3. Claims 11 and 22 are objected to because of the following informalities:

The following claimed element "VCSEL" recited by each of the claims 11 and 22 under a contraction form, should be preceded by its corresponding full name, e.g., -- Vertical Cavity Surface Emitting Lasers (VCSEL)--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Yamaguchi et al. (U.S. 5,365,535.)

Yamaguchi et al. discloses an optical information recording/reproducing apparatus comprising an array of modulatable light sources (451a, 451b, 451c, Fig. 17,) and an objective lens (460) positioned relative to said array of modulatable light sources such that said objective lens is capable of focusing at least one light beam from said array of modulatable light sources on a target medium (optomagnetic recording medium 461.)

6. Alternatively, claims 1-5, and 7-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Jewell et al. (U.S. 5,526,182.)

Jewell et al. discloses an optical recording system comprising an array of modulatable light sources (array 35, Fig. 7,) and an objective lens (focusing lens 47) positioned relative to said array of modulatable light sources such that said objective lens is capable of focusing at least one light beam from said array of modulatable light sources on a target medium (optical recording medium 8.)

With regard to claims 2 and 3, Jewell et al. further discloses the array of modulatable light sources comprising an array of VCSEL (Fig. 7,) and said VCSEL being embedded in a substrate, respectively (col. 4, lines 1-4.)

With regard to claims 4, 5 and 8, Jewell et al. teaches each VCSEL of said VCSEL array being capable of writing a separate track on said target medium (Fig. 6,) said modulatable light sources being spaced at regular intervals (Fig. 10A,) and being associated with separate path on said target medium (Fig. 10B,) respectively.

With regard to claim 7, Jewell et al. further teaches the array of modulatable light sources comprising at least one line of modulatable light sources positioned at an angle relative to a direction of movement of said target medium (Fig. 1) (col. 4, lines 4-33.)

With regard to claims 9 and 10, Jewell et al. also teaches a polarizing beam-splitter (38) located between said array of modulatable light sources and said objective lens, and a circularly polarizing element (39) located adjacent said polarizing beam-splitter, and wherein said circularly polarizing element comprises a quarter wave plate.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jewell et al.

Jewell et al. discloses all the basic limitations of the claimed invention and further teaches the spacing between the light sources being set at 32 μm instead of being at least 40 μm as claimed. However, it is well known in the art that such the center-to-center distance or spacing between the light sources are dictated by the spacing between tracks of the recording medium as well as the magnification of the optical system, as Jewell et al clearly indicates at col. 4, lines 51-64. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the device of Jewell et al. to set the center-to-center distance between the light sources at at least 40 μm to conform with the track spacing and the magnification of the optical system such that each VCSEL of the VCSEL array is able to write a separate track on the recording medium.

9. Claims 11-19, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jewell et al. in view of Yamaguchi et al.

Jewell et al. discloses all the basic limitations of the claimed invention except for the separate first and second arrays of VCSEL for writing and reading information data, respectively (claims 11, 12,) the first VCSEL writing array being individually modulated while the second VCSEL reading array being continuously operated (claim 13,) the first and second arrays having different wavelengths and the objective lens being achromatic (claim 14,) and an adjustment device coupled to the objective lens to adjust a position of the objective lens (claim 22.)

However, Yamaguchi et al. discloses an optical information recording and reproducing apparatus, which comprises two separate optical heads (522 and 523, Fig. 23) for reading after writing information data. Each of the optical head comprises a semiconductor laser (524 and 535, respectively) and an objective lens (553a, 553b, Fig. 24) for minute focusing the laser beams on the target medium (521.) With regard to claims 13 and 14, Yamaguchi et al. discloses in another embodiment a light source array (406, Fig. 12) for simultaneously generating light having two different wavelengths λ_1 and λ_2 , the light having the wavelength λ_1 being output as a light output modulated in accordance with information data, and the light having the wavelength λ_2 being output as a constant light output (col. 16, lines 39-45,) and the objective lens being achromatic (col. 10, lines 58-62 and col. 13, lines 1-4.) Yamaguchi et al. further discloses an adjustment device coupled to the objective lens for detecting the focusing and tracking errors to adjust the position of the objective lens (Fig. 17.)

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the device of Jewell et al. with the aforementioned teachings of Yamaguchi et al. Doing so would provide the system to accurately focus and track by reading the information data being just recorded.

With regard to claims 18 and 19, Jewell et al., as modified by Yamaguchi et al., fails to disclose the first and second VCSEL arrays being located on a common substrate with the same array spacing. It would have been an obvious matter of design choice, absent evidence of criticality shown in the present invention and the lack of implicit or explicit limit to a specific design in the prior art, to show the VCSEL arrays

being located on a common substrate, since applicant has not disclosed that such arrangement of the VCSEL arrays solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with two separate VCSEL arrays. It is noted that it is a truism that a claim need not be limited to a preferred embodiment. *Ethicon*, 93 F.3d at 1582 n.7, 40 USPQ2d at 1027 n.7 (quoting *In re Vickers*, 141 F.2d 522, 525, 61 USPQ2d 122, 125 (CCPA 1944)).

10. Claim 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jewell et al. in view of Yamaguchi et al., as applied to claim 12 above, and further in view of Hayashi et al. (U.S. 5,703,856.)

Jewell et al., as modified by Yamaguchi et al., discloses all the basic limitations of the claimed invention except for the first and second polarizing beam splitters along with a circularly polarizing plate located adjacent the second polarizing beam splitters (claim 20,) and the first polarizing beam splitter being a dichroic polarizing beam splitter (claim 21.)

However, Hayashi et al. discloses an optical data recording and reproducing apparatus comprising two separate light sources (141a and 141b) emitting separate light beams (143a and 143b) to be combined by the first polarizing beam splitter or half mirror (146) and then reflected by the second polarizing beam splitter (144.) The two light beams are further circularly polarized by the quarter wave plate (145) and are incident on the objective lens (147,) which converges the light beams into imaging points on the surface of the optical recording medium (148a.)

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It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate a first polarizing beam splitter or dichroic mirror as taught by Hayashi et al. in the device of the Jewell et al., as modified by Yamaguchi et al. for the purpose of combining the two light beams for recording and reproducing information data.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C Pham whose telephone number is (703) 308-1281. The examiner can normally be reached on T-F (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, N. Le can be reached on (703) 308-0750. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Hai Pham
May 30, 2001